



PRELIMINARY GUIDE TO THE IDENTIFICATION OF THE EARLY LIFE HISTORY STAGES OF  
DRACONETTID FISHES OF THE WESTERN CENTRAL NORTH ATLANTIC

BY

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January 2002

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This report should be cited as follows:

Hartel, K.E. and T. Nakabo. 2002. Preliminary guide to the identification of the early life history stages of draconettid fishes of the western central North Atlantic. NOAA Technical Memorandum NMFS-SEFSC-472, 4 p.

W. J. Richards, Editor. NOAA Fisheries, 75 Virginia Beach Drive, Miami, FL

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Draconetts are relatively small, somewhat elongate fishes that lack scales, have large eyes and a strong, pointed, retrose-spine on both the opercle and subopercle. The first dorsal fin has three robust spines. Along with the Callionymidae, they are currently placed in the perciforme suborder Callionymoidei.

There are about 12 species world wide (Fricke, 1992), with only two occurring in the Atlantic. *Centrodraco acanthopoma* (Regan, 1904) is wide-spread (especially as pelagic pre settlement juveniles at sizes between 8.6 to 25mm SL). Post-larvae are found far from the shelf and range to 60°W off the U. S. east coast. Records show a distribution from about 10°N to 40°N in the western North Atlantic. Post larvae (between 19 and 25 mm SL) are most often taken between 200 and 500 meters in mid-water trawls (MCZ material). Post settlement individuals are found at depths between 380 and 600 meters (Fricke,

1992). The second species *C. oregonus* (Briggs and Berry, 1959) is only known from a relatively small area off northeastern South America between 1 and 2°N. We have seen a 36mm SL pelagic juvenile of what is probably a third Atlantic species from the eastern Atlantic (MCZ 85926, Fig. X). This species is more elongate than *C. acanthopoma*, has a series of 4 dermal tabs or papillae on each side of the body, a smaller eye, longer pelvic fins, and fine stellate pigmentation.

Adult *C. acanthopoma* can be distinguished from *C. oregonus* since their second dorsal spine is the longest rather than the first and because they lack longitudinal strips on the body that are present in *C. acanthopoma*.

Draconetts reach 40 to 140 mm TL as adults and are reddish in color. Neither the eggs, or pre-flexion are known for either species. Post-flexion larvae of *C. acanthopoma* are well known but eggs and pre-flexion larvae are also unknown. Little else is known about their biology.

**FAMILY DRACONETTIDAE*****Centrodraco acanthopoma* (Regan)**

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**MERISTICS**

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Vertebrae:	
Precaudal	8
Caudal	15-16
Total	23-24
Number of Fin Spines and Rays:	
First Dorsal	III
Second Dorsal	14-15
Total	17-18
Anal	13
Pectoral	20-27
Pelvic	I,5
Caudal	
Principal	8 branched
Secondary	2 upper & 2 lower, unbranched but segmented

**LIFE HISTORY**

Range: North Atlantic 11-40°N

Habitat: Adults benthic in 380-600 m.

ELH Pattern:

Spawning: unknown

Season: unknown

**LITERATURE**

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Fricke, R. 1992; Nakabo, T. 1982; Nakabo, T. & K.E. Hartel 2000; Parin, N.V. 1982.

**EGGS:** unknown

**LARVAE:**

Length at Transformation: <8.6 mm SL

Length of gut: Short, reaching D<sub>2</sub> origin.

Sequence of Fin Development: All fin elements developed in the smallest known specimen at 8.6mm. Pectoral on small pedicle and pelvic fin short at this size. Pelvic fins adult proportions by 15mm SL.

Pigmentation: The 8.6 mm specimen is unpigmented except for a dark longitudinal band on the middle of the caudal fin.

Diagnostic Characters: three robust dorsal spines; a single spine on both opercle and preopercle; moderately elongate body.

**ILLUSTRATIONS**

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*C. acanthopoma* - Postflexion larvae, 8.6 mm, ARC H-4061, drawn by Hartel and Nakabo (from Leis and Carson-Ewart 2000). .

*Centrodraco* sp. A – Pelagic juvenile, 36 mm, MCZ 85926, 15°N 26°W, drawn by Nakabo and Hartel.

**EARLY LIFE HISTORY**

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8.6 MM



36.1 mm SL

## LITERATURE CITED

- Briggs, J. C. & F. H. Berry. 1959. The Draconettidae-a review of the family with the description of a new species. *Copeia* 1959: 123-133.
- Fricke, R. 1992. Revision of the family Draconettidae (Teleostei), with descriptions of two new species and a new subspecies. *J. Nat. Hist.* 26: 165-195.
- Nakabo, T. 1982. Revision of the family Draconettidae. *Japanese J. Ichthyol.* 28(4): 355-367.
- Nakabo, T. and K.E. Hartel. 2000. Draconettidae. Pages 139-140 in J.M. Leis and B.M. Carson-Ewart (eds.) *The larvae of Indo-Pacific coastal fishes: An identification guide to marine fish larvae. Fauna Malesiana Handbook 2.* Brill, Leiden. 850 p.
- Parin, N.V. 1982. New species of the genus *Draconetta* and a key for the family Draconettidae (Osteichthys). *Zoologicheskij Zhurnal* 61(4): 554-563 (In Russian).